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PROPAGATING PLANTS BY CUTTINGS OF RIPE WOOD.

BY ANDREW S. FULLER.

MANY kinds of plants whose stems and branches are composed of what is called ligneous fiber, are readily propagated by cuttings of the ripened wood. Sometimes wood of two or more years old is used for that purpose; but, as a general rule, that of one season's growth produces roots the most readily. The cuttings are usually taken from the parent plants in the fall of the year, as soon as vegetation has received a check in its growth, or as soon as the leaves of deciduous plants will part from the stem without injury to the buds adjacent.

Autumn is also a proper time to make cuttings of many kinds of evergreen plants, more particularly those of hardy trees and shrubs.

A branch, when it ceases to grow in summer or fall, contains a large amount of matter which has not assumed any particular form or structure, and it is in a proper condition either to produce roots or branches. With some kinds of plants it can be made to produce the former very readily; with others it is quite difficult—simply because we have not learned the proper conditions necessary for their development; and it is just here that we come upon the great secret in the propagation of plants—*i. e.*, under what conditions should a particular plant or cuttings of it be placed to insure growth? Cuttings of the willow, currant, and many other woody plants will grow quite readily, even if taken from the parent plant at almost any time of the year, while a branch from the hickory would be difficult to make produce roots under the most favorable conditions, although it is not among the impossibilities to grow hickory cuttings. The gardener, however, does not seek the most difficult methods in multiplying plants, but the easiest, consequently we have many ways of producing the same results.

It requires more or less time for a cutting to produce roots; and as it is apparent that it is better to give an abundance than too little, we usually make the cuttings of all woody plants in autumn, because by doing so, we secure several months in which to produce the change, or, in other words, for roots to form. Roots are produced more readily at a low temperature than leaves—also in the dark—and these conditions are easily secured, even in the coldest weather, for the earth, although

frozen on the surface, is always warm enough below to afford a proper heat to produce roots on most kinds of woody plants native of a similar climate.

We avail ourselves of the knowledge of this fact, and make the cuttings of hardy plants in the fall, and either plant them immediately where they are to grow, protecting them from the frost, or covering with moist soil, in some convenient place, where the temperature which surrounds them will be above the freezing-point, but not so warm as to excite the leaves into growth.

In such a situation the process of forming roots will go on; and some kinds will become so well rooted by the time the regular growing season commences in the spring, that the roots will be able to supply the leaves with nutriment as soon as they are expanded; consequently a rapid growth early in the season will be produced. Although the roots of some kinds of plants will form at a very low temperature, still, if a higher one can be obtained, while at the same time the buds which are to form leaves can be kept in a cool atmosphere, a great point is gained, because roots must be produced before anything like rapid or permanent growth can be secured. These conditions are produced naturally in the open ground, for the temperature of the soil in the spring is generally warmer than the atmosphere, and the lower end of a cutting, from which point it is always desirable to have the roots produced, receives more heat than that portion which is exposed to the air. In latitudes where the ground freezes to a considerable depth, every one who has ever taken the trouble to examine the soil at the time of its thawing in spring, must have observed how much more rapidly it thaws from below upward than from the surface downward. Heat descends very slowly, but cold rapidly, and just as soon as the weather becomes so warm that the surface does not freeze, the heat from below will rise to the surface.

The hot-bed used by the gardener is formed on the same principle. His object is to secure heat for the roots, while the branches or upper portion of the plant are kept comparatively cool. Thus plants are grown with what is usually termed bottom heat.

Nearly all plants emit roots more readily at or near their buds than elsewhere; therefore in making cuttings it is always best to sever them just below the bud, leaving it on the cutting, thereby exposing the wood

Fig. 87.

at a point from which roots appear to be produced naturally. Some species of plants, like the willow and quince, emit roots very readily from every portion of the stem, and with these it is not necessary that they should be cut off at a bud; yet even these grow more rapidly if made in this manner. With some of the hollow-stem plants, like the common Deutzia, the orifice is usually entirely closed, or nearly so, at the point where the bud is situated; and it must be apparent that there will be less liability of water lodging within the stem and causing its decay if severed just below the bud than if at any other point.

Figure 88 shows a section of a stem of Deutzia scabra: A is the hollow in the stem; at B the orifice is closed by the wood growing completely across, thus preventing water from passing beyond the bud, even if it should enter the cutting from below. In other plants the hollow in the center of the stem is continuous; but in many others it is closed, as shown, or filled with a pith, as in the common elder, grapevine, weigela, etc.

FIG. 88.

There are some plants that do not emit roots readily from any other point except near their buds, and therefore it is evident that they should be cut at this point, so as to expose that peculiar substance (cambium) from which roots are produced where it is most abundant. Cuttings should always be made with a sharp instrument, for the fibers should be cut off smooth, and not broken or crushed.

The roots produced on a cutting are supposed to be formed from the sap or juices of the plant that have been assimilated by the leaves from the ascending liquid absorbed by the roots. After assimilation has taken place, the sap descends mainly between the bark and wood, but a portion through the bark; and it is from this substance that roots are formed. I am aware that the young branches of some kinds of woody plants having a large pith or hollow stems will produce roots from the inner portion, but this is not sufficient cause to disapprove the general theory of circulation of the sap, or that roots emanate only from the elaborated sap or nascent matter, because it is not impossible nor contrary to the general principles of vegetable physiology that a portion of the true sap of exogenous plants may not pass from the outer to the inner surface of the stems of young one-year-old wood, at least when it is placed under artificial conditions.

There are some authors who contend that a bud, either latent or developed, is essential on a branch to enable it to produce roots—in other words, that roots always proceed directly from a bud; and if a cutting is severed at a distance below a bud, the roots start from the lowermost one, and push their way down under the bark and out at the end, establishing a communication with the source from which they are to derive their future nourishment. It was also once supposed that in the same manner all the buds below the surface of the soil which do not grow upright and form branches, produce roots by going down, overlapping and intermingling with those produced from the upper bud. A similar theory is sometimes advanced in regard to the manner in which a bud or graft unites with the stock upon which it is inserted. Both theories, however, are founded upon error, as can be readily proved by any one who will investigate the subject for the purpose of learning the truth.

The erroneous theory of roots emanating only from buds, doubtless originated from the fact, that many kinds of plants grow more readily from cuttings if they are taken off close to the base of a bud, as before stated, thereby strengthening the belief that at this point only existed the nucleus from which all the roots were formed. To ascertain whether buds must exist on or within a cutting, to enable it to produce roots, it is only necessary to take a section of the stem between the buds (called the internode) of some kind of plant that has no latent buds—for in-

stance, a young shoot of the grapevine, or any similar plant—then make such a cutting produce roots, which it will readily do in the ordinary method. No buds will appear, yet roots will be formed, produced more or less in proportion to the natural vitality of the plant and the amount of available material which it contains. Of course the roots can not grow for any great length of time, nor to any considerable size, without the assistance of buds and leaves to prepare the food which they absorb.

That roots will exist, and continue to grow, feeding upon the food stored up in the plant, and upon that which they absorb, without the assistance of leaves or buds, a much longer period than leaves will without roots, is well known. The tubers of the herbaceous paeonia, for instance, will live and grow for a year or two without a bud or leaf, and its seeds, if sown in the open ground, will generally emit roots and grow the entire season before the leaves even escape from the seed covering.

The only analogy that I could ever discover between a cutting producing roots and a graft or bud uniting with the stock is, that the substance that produces both is the same, unless the grafting of some of the succulent plants which do actually produce roots from the grafts which feed upon the substance of the stock be called proper grafting, which it is not, but is only rooting cuttings in the stems of another plant instead of the soil.

Why one kind of plant will produce roots more readily than another is certainly, at the present time, unknown. Neither is the origin of buds sufficiently understood to allow of any rule being given that would be satisfactory to the practical horticulturist. We know that some plants produce buds from every portion of the stem and roots, which leads us to the conclusion, that every cell is capable, under proper conditions, of producing a plant similar to the original one.

Plants are called compound because they are composed of many buds, each of which may be taken from the parent and compelled to sustain itself as a separately organized structure. The extent to which this subdivision may be carried appears to depend entirely upon the skill of the propagator.

The soil in which cuttings are planted in the open ground should be deep, of a porous nature, and composed of ingredients that will absorb and retain a regular supply of moisture. The variations of climate should be attended with a corresponding variation in soil, which, in warm latitudes, should contain powerful absorbents, so that it will not become too dry in summer; while a soil for the same purpose in the more northern latitudes would be better without these absorbents. In this latitude a loamy soil of fine texture is perhaps the best—one that is not so fine as to break and crack after a shower, or so loose that it will not retain moisture sufficient to supply the wants of the cuttings.

The amount of moisture required by cuttings varies greatly in different species, some requiring little, while others a very large amount. The poplar, willow, and many other kinds of trees will grow more readily if the lower ends of the cuttings are immersed in water containing but very little organized matter. But, as a general rule, cuttings do not require more moisture than is held in suspension in well-drained and friable soil.

Rank substances, such as undecayed vegetable or animal matter, should never be allowed near cuttings; and where it may be necessary to use manure, it should always be old, well decomposed, and thoroughly incorporated with the soil at least six months before the cuttings are planted.

Some propagators plant their cuttings and then cover the surface of the soil with manure. The juices of this will percolate the soil at every shower, and furnish food in solution to the cuttings. I have found this to answer remarkably well in some

seasons, while in others a fungus (mushroom) would spread itself through the manure, and when it came in contact with the young wood, it was very likely to destroy it. This, however, can be easily prevented by frequently stirring the manure; and I may here remark that from many years' experience I have never found any other mulching necessary (if the soil was previously rich) than that of frequently stirring the surface. Planting the cuttings too deep should also be avoided, as the farther from the surface they are, the less solar heat they will receive, and this is necessary to insure rapid growth after they have become rooted. If the cuttings are short, plant perpendicular; if long, they may be put in at an angle. In growing cuttings of the ripe wood of evergreen plants, the same plan should be adopted as with deciduous plants, except that the cuttings must not be entirely excluded from the light or wholly buried in the soil, for in making them, the leaves are left on that part of the cutting which remains above ground. If they were covered entirely with earth they would soon decay. The leaves of our hardy evergreen plants are covered with a very compact epidermis, which does not allow them to exhale or inhale moisture very rapidly when in a dormant state.

This peculiarity in their structure admits of their being placed in such a position that roots will form while their leaves do not suffer. They should be placed in what are termed cold frames, and covered with glass that has been dimmed either with whitewash or white paint, so as to prevent the direct rays of the sun from reaching them, as that might give them too much heat and excite them into growth before roots were formed; or the frames may be covered with a screen made of lath, as shown in figure 89. This may be covered

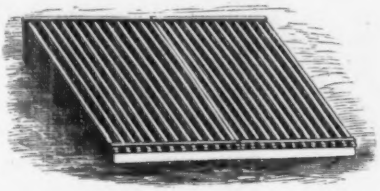

FIG. 89.

with straw or mats in winter to keep out the cold. The soil in which they are planted should be more porous than that in which cuttings of deciduous plants are grown, as the stems are not quite so firm, and are more liable to be affected by moisture. One third old decomposed weeds or leaf-mold and two thirds sand make a good material for the purpose. Keep the bed constantly moist, but never wet. The same care as to temperature must be observed as with other ripe-wood cuttings, never allowing the heat above ground to go below 35° or above 50°, if it can be avoided, until roots are formed.

WALKS and garden paths should be kept clean and free from weeds or grass, as much of the comfort and appearance of a place depends on their condition. In the making of walks, the refuse of iron or copper works forms a good base, upon which weeds rarely grow. Loose gravel is very objectionable to tread upon, and we have often cemented a plain gravel path by merely adding wood ashes, raking it well, then wet down and roll. A short time will cause it to set and become firm. Once a walk is formed, it should not be disturbed with the hoe, but the weeds while young should be hand-pulled, or, better yet, dosed with salt to destruction.

Gas tar, coal ashes, and gravel also make a good path, but the odor from the tar, which continues a long time, is to many objectionable.

FIG. 90.—*Sea-Side Cottage—Perspective View.*

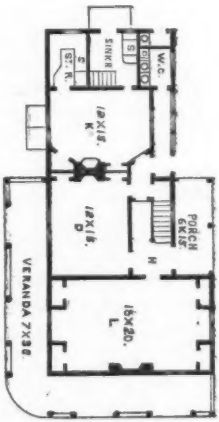

FIG. 91.—*First Floor.*

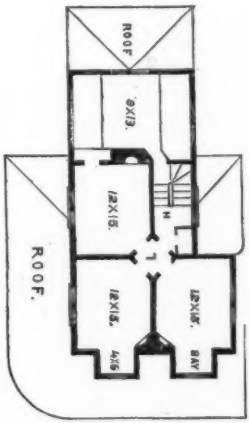

FIG. 92.—*Second Floor.*

SEA-SIDE COTTAGE.

DESIGNED BY F. S. COPLEY, ARTIST, TOMPKINSVILLE, STATEN ISLAND, N. Y.

This cottage was intended for a summer resort on the sea-side, for a small family keeping but one servant. It will be seen to combine with a picturesque exterior convenience of arrangement and economy of construction.

It was intended to be built of wood (balloon framed), filled in with brick, and roofed with shingles cut in patterns, and finished throughout in a plain cottage-like but substantial manner—the posts, rail, etc., of the veranda to be formed of the trunks and branches of the red cedar tree, left rough, with the bark on.

The engraving is a perspective view of the entrance front, and the east or garden side, as seen from the gate.

The accommodation consists of seven good rooms, a cellar, and all other necessary conveniences, and are arranged as follows. (See fig. 91, principal plan.)

H, the hall, entered from the porch by double doors, with swinging sash panels, which pleasantly light and ventilate it. On the left, as you enter, is the living-room, lighted by four windows, each commanding fine views of the sea and surrounding country. The one in front is finished with a seat; the other three are French casements, opening to the floor, to give access to the veranda. Four closets for books, etc., are so arranged at the ends of the room as to give the pretty effect of bay-windows. The fire-place is made for burning wood on the hearth, in the old style. This is quite a large and handsome apartment for so small a cottage, being twenty by fifteen feet, and ten feet high.

The door opposite the entrance leads into a cheerful little dining-room, possessing the same fine view of the sea from its casement window, and access to the veranda, as the parlor. Closets for glass and china (with a pass in the latter) are fitted up on each side of the fire-place. By this is a door to the lobby, which communicates with the hall, kitchen, hat and cloak closet (under the stairs), and outside, etc. The outer door is lighted in the panel and protected by a rustic veranda, intended to be covered with vines.

The kitchen is well lighted, and arranged for the especial convenience of the housekeeper, with everything needful at hand—closets, dresser, and range (with hot and cold water), store-room and scullery (with sink, water, and fuel in an adjoining lean-to). The cellar is under the kitchen, and entered from the scullery—there is no leaving shelter for anything.

Ascending the stairs to the second story (see fig. 92, chamber plan), on the landing to the right is the servant's room, thirteen feet by nine, made in the roof of the wing over the kitchen. This room is well lighted in the gable, and ventilated by a valve in the chimney, like all the rest, and has large stow-away rubbish closets on each side. A few steps more to the left is the upper hall, lighted by the front dormer, and fitted with a clothes-press and linen-closet. By this is a small lobby, with sky-light and ventilator above, communicating with three light and airy family chambers, each fifteen feet by twelve, and nine feet high, with closets, fire-places, etc.

The bays in the two rooms over the living-room, if fitted up with curtains, would make excellent dressing-closets—a degree of luxury and refinement never provided for in a cottage of this class. It will be seen by reference to the plans, that the *rooms* are *all* placed on the side of the *sun* and *views*, well lighted and ventilated, with direct and easy access from one to another, fitting it as well for a permanent home as a summer resort. The exterior is most picturesquely broken, each side presenting a bold and different design.

PURE NATIVE WINES—WHAT AND WHERE ARE THEY?

During the past two or more years every journal, agricultural, horticultural, political, literary, and religious, throughout the length and breadth of the States, has had more or less to say in regard to the cultivation of the grape and its conversion into wine. The grape and its ultimates have been the great items of discussion in all horticultural associations; numerous new books have been published, and altogether our people have appeared as one whole, ambitious to exhibit the United States as equal to, if not surpassing, the best wine-producing districts of the world. This is all laudable, provided we exhibit the product to sustain our assertions. To see how far we have done, and are doing so, is the object of our present writing.

Some six or seven years since we set about a close observation and examination of our native wines, and wherever we could hear of a maker of wine who had even a shadow of credit, we sent for a sample. We have visited many wine cellars, have attended exhibitions, and although not always "ye committee man," yet have always obtained an opportunity to examine the wines exhibited.

And now, first, what is wine? Is it the pure juice of the grape fermented? or is it a little grape-juice and sugar-water—or such other substances as the maker deems will make a pleasant drink and sell?

For the credit and reputation of ourselves and our country, we must take the first stand-point. Pure wine is entirely the expressed juice of the grape fermented and void of addition of anything whatever. The moment we drop this, we open the passway for every style of preparation and addition. He who tells us that there can be no harm in adding sugar and water before fermentation, in order to bring up its grade alcoholic to a keeping point, or that by such addition he has increased the volume of his measure, and reduced the acid that would otherwise have made his product objectionable, certainly can not tell us that he has with his addition increased the healthful tonic qualities that lie in the fermented juice of the grape alone, and for which it alone is prized. Chemically there may be found no injurious matter in such preparation, but it is strictly a preparation, and not pure wine.

If we were to allow as wine this preparation of sugar and water addition, then we would be ready for the next process of adding sugar only, which is the more common practice among those who make only small quantities, and of various qualities and alcoholic strength, according as they increase or decrease the quantities of sugar to the gallon of must. Next we go on to the maker who with one third grape-juice, one third cider, sugar-water, acetate of lead, oil of rose, etc., makes us drinks from the same cask; and one he gives us with a slight pink shade, which he calls his pink wine; the other he gives us clear and white as water, and both, if we drink freely, give us an intolerable headache, from which we do not recover in three or four days.

So much for this opening of the gap to admit as wine anything but the grape-juice fermented alone. "Oh, but," says one, "my grape-juice won't keep unless I add sugar or spirit or something!" Very well, then, add it, and offer it for sale as grape cordial, stating on your brand the amount of sugar or alcohol that has been added to each gallon of must, but don't brand our country any longer with offering a preparation as wine which is a lie to the knowledge of every intelligent wine-taster! Do this with the product of such grapes as you now have, but go to work and plant and cultivate such varieties as will enable you to make from their must

alone a wine creditable to yourself, and to assist in exhibiting our soil and climate as truly capable of growing grapes that of themselves will make the best of pure wine.

With these remarks on "What is wine?" we will next take, "Where is it?" And as we have said our examinations of samples have been, during the past two years especially, rather extensive, but with one or two exceptions we can not answer the question. Delaware has been sent us from Cincinnati that evidently had been sugared; from Missouri we have had it of several makers, and not one pure; from Illinois we have had it, and all doctored. The only pure Delaware we have ever met that was wine, has been some of John E. Mottier's make, and some made by Lewis Harmes, Put-in-Bay, Ohio. Now we do not believe there is any reason for ever making any other than pure wine from the Delaware grape, because the grape has in itself all the qualities to make a good wine, and it has the character of fully ripening its fruit in nearly all sections.

Concord we have had from many sources. All through the eastern and northern sections its must is too light in sugar and too strong in acids to make a pleasant wine, or even one that will keep, except in the temperature of wine cellars. And hence all our samples have had sugar added, under the too common impression that such was wine. In south Illinois and Missouri the Concord can be grown to make a pleasant, light claret wine, with, as we think, however, too much acid, but nevertheless very good, and as such we have drank of it; but, in nine cases out of ten, when received from that region of the Concord's best success, it has there been increased and toned down into a drink by addition of sugar-water.

The Diana, from all sources that we have received it, with one single exception, has been a sweetened preparation. That one was an exhibit on a small scale of a few hundred gallons, where the fruit was allowed to hang until fully ripe, then laid out and exposed on tables for a few days, pressed, and resulting in a very fine wine of delicate, rich, aromatic character and flavor.

Isabella, although ranking higher in weight of must than Concord throughout the East, North, and Western States, yet has so much acid that it does not, except in some one or two localities, make a wine that will keep well or be pleasant to drink, and as a consequence, everywhere almost that we have drank of it, we have found in it an addition of sweetening material.

The Catawba is the grape on which the reputation of the country so far stands as a wine-producing country, and it is to be regretted wine pressers have not as a whole better understood its capabilities and given us thereby a grade even higher than we now have for a pure and pleasant yet sufficiently strong dry white wine. Most vignerons gather and press it before it is ripe; others sell all the best bunches from their vineyards for table use and then press the remainder; very few leave all the fruit to ripen as long as it is possible for it to remain on the vine, and then gather and select, so as to make two, aye, even four classes of wine from one vineyard, viz., the first and second runnings of the selected grapes, two, and the first and second runnings of the culls—four.

A very large number of those who make wine even from this grape, owing to their want of care, find the must with too heavy a percentage of acid, and add sugar; but nevertheless there are many thousands of gallons of really pure Catawba wine made at the West, and among these good ones, the very best we have ever drank we received last fall from George Leick, Esq., of Cleveland, Ohio.

The Iona is said by its originator to make a superior wine, and we shall be glad to see it prove so; but the statements he makes of its weight of must, percentage of sugar, etc., do not compare well with the record of a test from specimen fruits

presented by him at Cleveland last fall, and which fruits before the test were declared as over-ripe, and with difficulty kept until the exhibition. That test gave 79° as the weight of must, by Oecshle's scale, which reduced would give us $18\frac{1}{16}$ of sugar, which again brought to spirit would give 9 per cent., which, if there was not too much acid, would make a pleasant light wine; but when we find this same test giving $9\frac{3}{16}$ of acid, we have some reason to doubt its great value as a wine grape.

Wine claimed to be made from the Ives seedling has recently been sent around the country, in sample bottles, and some of our most able journals have given place to records of its superior value and the high prices at which large quantities of it have been sold, viz., $4 25 per gallon. We have tasted now—we have done so before of it, and our conviction then was and is now, that grapes which only yield 64° to 65° of must, by Oecshle's scale, when converted into wine, in order to reach the condition we see it in, must have had sugar added to it. In two cases where we have drank of it, as specimen bottles, there was to us every evidence of a mixture of Norton's Virginia, and with which Ives may be made into a good wine. And this, by the way, is the great secret and valuable knowledge of an honest wine dealer, for in mixing pure wine he deteriorates nothing, but only raises the character of one and reduces the other to a uniform grade. This, however, is no child's play, and there are few men of fine taste enough to practice it successfully. We lately saw a good judge of wine quite deceived by what he supposed a Delaware, that in fact was only a mixture of some Rhine wines.

Wine from the Norton's Virginia grape we have generally found nearly pure; it is so rich in itself of all the qualities that make up a good red wine, that there is no necessity of adding anything thereto; but its volume may be, and sometimes is, increased by dealers, by means of sugar-water before fermentation, reducing its richness and lessening its bouquet, although not destroying it.

There is a class of mixtures called California Wines put up, neatly and prettily labeled, and sold by almost every druggist throughout the States. We never enter a drug shop and see one or more of these labels and placards, but that we feel almost like accusing the proprietor of doing willful injury to his fellow-men. It is well known hundreds go to the druggist for liquors for medicinal purposes, there expecting to get only a pure article, and these so-called California Wines are so great impositions on the name as already to supply a source of laughter and amusement wherever they are spoken of among knowing wine men.

NEW MODE OF GRAFTING THE VINE.

(*From the Gardener's Magazine.*)

The uncertainty and inconvenience of the customary mode of cleft-grafting the grapevine are known to all who have practiced it, and the only course of practice that has been discovered tending to increase certainty is that which consists in cutting the stock close over the ground, and covering the work with earth.

M. Auguste Boisselot, arboriculteur of Nantes, has sought a remedy for these inconveniences, and after many years of experiment has attained complete success.

Here is the method. He cleaves the stock between two bifurcations. It is no matter at what height of the stock this is done. Into the cleft he introduces the graft, cut as for ordinary cleft-grafting. It is then bound up with a strong ligature and

grafting wax. He next binds the two branches of the bifurcation at two or three eyes above the cleft; and in the spring, as the sap rises, he pinches back the young shoots, causing thereby a flow of sap into the graft. He does not cut off the two stumps of the stock until the autumn following the insertion, by which time the graft is well developed.

The experiences of M. Boisselot have sufficiently demonstrated that this mode of grafting is nearly infallible. It offers the utmost advantages to the cultivator, especially as a graft can be inserted wherever there is a bifurcation, hence affording the power to place a number of grafts on the same stock. The sudden suppression by means of the knife of the whole of the vine above ground is always prejudicial to the root action, and the "Greffe Boisselot" is free from this objection. Another important advantage attending it is, that if the graft does not prosper, nothing is lost, for the branches of the bifurcation will produce their fruit the same, and the stock will not suffer more than from the check to which it is subjected by the ordinary process of cutting down.

The horticultural journals of France have given publicity to this invention, and rendered justice to its inventor. The Imperial and Central Society of Horticulture of France has been occupied at several of its meetings in the consideration of the subject, and M. Ducharte, the secretary-general, testified, at one of its recent meetings, that he had practiced this new mode of grafting with success.

The "Greffe Boisselot" may be practiced at every season of the year, but its inventor recommends—and with reason—that the autumn should be preferred, the best time of all being when the leaves of the vine begin to turn yellow.

FIG. 93.

We consider this invention as of immense service rendered to the culture of the vine. A diagram explanatory of the process is subjoined. It represents a graft made on the 6th of October, 1864, and which commenced to grow in June, 1865.

JEAN SISLEY.

RUE ST. MAURICE, MONPLAISIR, LYONS.

IT is a good plan in every garden to have a reserve bed, in which may be placed the "odds and ends," or the surplus of spring propagation of bedding plants. This bed may be planted without any regard to order, its purpose being merely to furnish a source of supply to replenish any plants that may have failed in the regular flower garden. This bed may be in the kitchen garden, or in any other favorable location, as it is not designed to be an object of beauty in itself.

FIG. 94.—*A Suburban Residence—Perspective View.*

FIG. 95.—*The Same, showing Mansard Roof to Tower.*

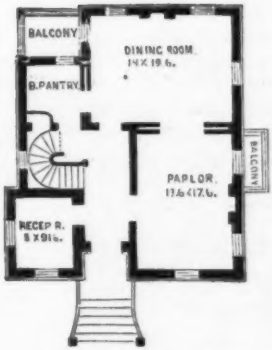

FIG. 96.—*First Floor.*

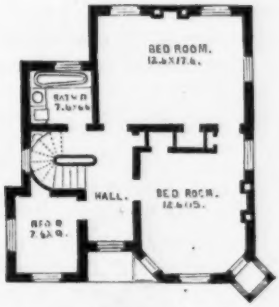

FIG. 97.—*Second Floor.*

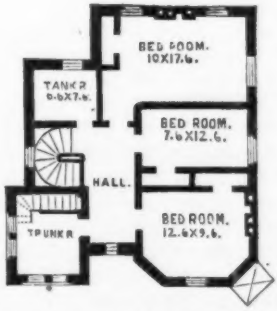

FIG. 98.—*Third Floor.*

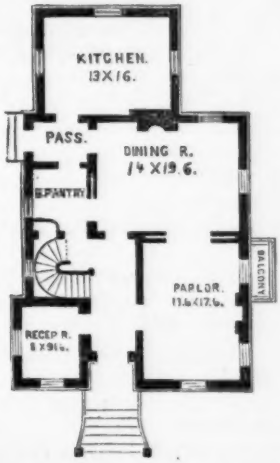

FIG. 99.—*First Floor, showing Kitchen connected.*

A SUBURBAN RESIDENCE.

BY CARL PFEIFFER, ARCHITECT, 4 BROAD STREET, NEW YORK.

THE accompanying design is one of twelve houses built on Staten Island about three years ago. It is of brick, with brown stone trimmings, and faced with Philadelphia front brick, and has a slate roof. Having fine views in all directions, it was thought more desirable to have the kitchen, laundry, and servants' rooms in the basement; but should it be preferred to have the kitchen on a level with the ground floor, a wing could be added, as indicated by fig. 99. For reasons of economy, the Mansard roof of the tower was omitted; what the effect of it would be, can be seen by referring to the perspective fig. 95. The ground floor contains a reception-room or library, parlor, dining-room, butler's pantry, and hall closets. In the principal front to the

right of the tower, it will be seen that the rectangular form of the lower story was not continued in the second, but given a semi-octagon appearance to the second story front, affording a balcony at one angle and a convenient entrance to an oriel window at the other angle.

This oriel window has proved a desirable feature, especially to the ladies of the house, to read, to write, or sew in, affording a fine view in several directions; it also forms a pleasing feature of the exterior.

The house was built by days' work, but it is estimated to cost $8,000.

WOMEN IN HORTICULTURE.

Is Horticulture a suitable occupation for women? Is there anything degrading in the cultivation of fruits and flowers? We are told in sacred history that the first gardener had a woman given him for a helpmate and partner; then why should we not only admit, but encourage women to assist in producing those blessings that our Creator in his beneficence has given to *mankind?* We have some excuse for not urging women to engage in general agriculture, for besides needing strength in that position, she would come in contact with many things repugnant to the finer feelings of her nature. But in Horticulture she would seldom meet with anything distasteful. True, we would not ask or expect her to do the coarse drudgery of the business, leaving that for such men as seem to have been created to be hewers of wood and drawers of water, and whose tastes and aspirations are but little above those of animals. But what could be more agreeable to refined tastes than to cultivate and handle our ordinary fruits, especially the smaller kinds? Is it less noble than sitting idle, or waiting upon customers in some close, half-stifling shop in a city, or plying the needle for sixteen hours a day, for scarcely enough to keep soul and body as partners for a few years, with no time for relaxation from toil or to enjoy the exhilarating pleasure of breathing the free air of the country?

Fashion, the tyrant, and the near relative of Want, has excluded woman from many channels of usefulness, and often compelled her to walk the downward road to degradation. Shall these influences continue to exist when her labor and society are needed in many positions of life where at present she is seldom admitted? Would not the very presence of women in horticultural society be a benefit to the profession? for *out of respect for the ladies* some of us would be more gentlemanly in our deportment, and more civil in all of our dealings with each other. We think that it would have this desirable effect, at least it is well worthy of a trial.

This is no insignificant subject, nor one that should be passed over with indifference. We do not wish to harp upon the already much abused subject of women's rights or wrongs, but we respectfully submit these remarks in behalf of the general welfare and progress of Horticulture. If our mothers and sisters are so fortunate as to have been born in or raised to a position of comparative freedom from manual labor, we should not forget those who are not so well situated, but endeavor to find or make employments that while they furnish the means of subsistence will be the less arduous because of their congeniality.

Our government has liberally endowed the prospective agricultural colleges of our country for the education of men; would it not have been well to give a portion to the endowment of horticultural departments for the education of both sexes? Must the mothers of great men, yes, of nations, be circumscribed in their usefulness, and be compelled to walk in channels unsuitable to their proper development because of fashion or false education of both

their own and the ruling sex? Thousands of women, old and young, are now crowded into our cities who would gladly seek employment in the fruitful fields of the country if they could be assured that the finger of scorn would not be pointed at them.

We all honor a Mrs. Loudon who did not think it beneath her dignity to prosecute the work her much lamented husband had begun. There are a few such noble examples in Horticulture, and we have to regret that the record contains so small a number. At the time Mr. Loudon published his "Encyclopedia of Gardening," there had been about four hundred authors of works on gardening in England; out of this number only five were women. We do not doubt they had given assistance in many instances in which they have received no credit.

We are glad to record the fact, that within the past year one lady has announced herself a member of the horticultural profession. We refer to Miss J. L. Waring, of Amenia, Dutchess County, N. Y.

Miss Waring has built four large propagating-houses, which cost nearly $10,000, besides purchasing ample grounds for carrying on an extensive business. The propagation of grapes has been the main business the past season, and we believe her success has been excellent. From a very slight personal acquaintance with this lady, we do not hesitate, in behalf of horticulturists in general, to welcome her among us, believing that she will be an honor to the profession and of benefit to the country at large.—*From "Woodward's Record of Horticulture," by* A. S. FULLER.

ABOUT PEAR-TREES.

EVERY one knows that when a man's head is set, it is very difficult to turn it—that when an idea or opinion has once possessed a brain, it is not easy to dislodge it, even if it is a poor tenant who never pays.

"What has that to do with pear-trees?"

Everything, Rowley, everything—for that is the introduction. Now, see how ingeniously I shall spin from it.

Many people hold, that pear-trees are to be desired because they bear pears, and that pears are to be valued for the palate, because they are rich, juicy, and delicious—for so they certainly are. That is the notion which has possessed some brains, and I can not deny that it is plausible; yet it is mainly a mistaken one—a narrow and carnal view.

"But," said my familiar, "when the professor brings me down one 'Duchess,' and two 'Flemish Beauties' (I am speaking of pears), and my lips kiss their cheeks, and their juices flow along my tongue, to gladden the sense, then I hold to that view, and I bless God——"

Now wait, Rowley, wait, I said; for I was afraid he would say something foolish. So he sat in my porch, and, with his cigar (which I condemn mildly), disputed the fragrance of the honeysuckles, and listened to the wisdom of age.

Whoever, I continued, whoever prizes simply his existence—who thinks highly of his presence, values his deportment, and is content with "being"—in other words, whoever believes life is an end rather than a means, and, therefore, is content to *be*, rather than to *do*—he may think himself happy; but he is mistaken. You shake your head, Rowley; but it is so.

So it is with pears—they, too, are a means, not an end.

Whoever, having grown a fine pear, is elated, and lays much stress upon the tempting fruit, is in danger of sorrow and disappointment—he may be laying up for himself a future grief. Yet I must allow,

that, if the fruit had been nipped by an untimely boy, or arrested by a summer blight, before its juicy flesh had been ripened to perfection, my own sense of propriety would have been shocked; for all things work toward completeness, and thus minister to our satisfaction. Satisfaction, my dear friend—not happiness—is the end and aim of a true existence. Consider what it is which satisfies, when we look upon a daisy or violet blooming in the shelter of a rugged rock; upon the cedar, the oak, or the beech, spreading its broad branches over the shadowy plain; upon the field of grain, waving in the light of the golden sun; upon the succulent asparagus, pushing through the dark, damp earth—these all come to the fullness of perfection, and we are satisfied with them, for they are complete. It is so with the wood-duck, diving and sporting in the still waters of an inland lake; with the robin, that sings out his soul to his mate brooding on the sky-blue eggs; with the slow and stalwart ox, who drags the plow along the fertile furrow; with the hound who courses the wily fox, and with the fox who outwits the chasing hound—these all satisfy us, for they are complete; they do *well* what they are made to do. Is it not so with men, my friend? We find no fault with a man, or a woman, who does a thing well—but are satisfied; and he who makes a perfect pair of shoes, does as complete a thing as he who sits well on a king's throne, or decides justly on a judge's bench.

It is the same in art: for the completeness of Menét's Ragpicker (two inches high), or his Cat Suckling her Kittens (done in clay), is equal in perfection to the Dying Gladiator, or Angelo's Moses, done in marble. In literature, also, we find this is so, and we are satisfied with Burns's verses to a Mouse, with Leigh Hunt's Abou-ben-Adhem, with Lowell's

> "John P.,
> Robinson, he"—

because they are, in themselves, as perfect and complete as is a Hamlet, or a House of Seven Gables. It is therefore desirable that men and women should do that well which they can do, and find out as soon as possible what they can do best, and not waste too much time in tears or complaints because they can not do something else. The man who raises good potatoes is eminently worthy, as is he who makes good verses, busts, or coaches, and either of them may be a complete man (and so great), and satisfactory to himself and to his fellow-men. It is not the thing done, but the spirit of the man who does it, that God loves.

Now it will be clear, therefore, that, to the pear-tree, it is necessary to bear pears, for that is its vocation, its purpose. It was for that, that the brown seed was dropped into the earth; that when the warm, bursting spring came, it sent down its delicate root, and pushed up its tender top, and unfolded its leaves, and stretched forth its branches, and, when the time came, elaborated its juices into buds enfolding blossoms—fragrant promises of future fruit.

It is right, therefore, for the pear-tree to bear pears.

But, for a man, his duty is to furnish the tree with every possible facility and convenience necessary for it to perfect its purpose; for the tree can not do this for itself. He is to see that there is good soil, and that it is in good heart (not made over rich), and well dug and broken, so that the rays of the fructifying sun can enter it, and the gentle dews sink into it; then he is to plant the tree in it. And let him do that well—for trees are grateful; they like not to have their roots crowded into a small hole dug in a hard soil—no well-bred pear-tree will submit to such indignity, and many will die if so treated—but rather into the mellow earth; spread out the roots, and press among them the genial mold, so that they kiss one another; and plant not too deep, but so as to cover, with an inch of earth, the neck whence the roots branch; then sustain the stem with

a slender stake, and the first work is done. Whoever has done this, will value the warm April sunshine and the soft April showers, and he will watch in the last of the month, till he shall see the unfolding buds; and then the expanding leaves, and the lusty shoots, wagging in the wind, will give him hope. In another year, he will wait for blossoms, and, when they come, he will be thankful. He will see to it that no marauding caterpillars fatten there, that no curculio whets his tooth in that first fruit; for he will walk in his garden in the fresh morning, in the shimmering noontide, and at the shady evening, and will feel that he has something to live for. He will be the providence of his pear-tree, and a worthy man.

I shall always remember S. G. P., who at last found peace among his pear-trees—a Salem and repose. He was early driven forth, Ishmael-like, into the wilderness, as other men are, and was in danger of perishing; for, was it not necessary, indispensable, to have much wealth, to be a merchant prince, and send forth ventures in ships? To other men, older men, it seemed so, and his rapid energies grappled with these weapons with which to fight the world; for other men and merchant princes were struggling to get what all could not have, and there were many obstacles to be overcome, and much competition. For years he worked like a lion, and knew no rest; he visited many lands and braved many seas, and for what? That he might secure, in his own hand, a larger share of the world's wealth, and so be pointed at as the man who owned much gold. But ships were lost, and fires ravaged, and agents were dishonest, that they, too, might have wealth; and the end saw S. G. P. a ruined man. When he was too old to reform his life, so as to work and not waste his energies, he remembered his father's garden and his pear-trees, and there he went, with a small income, to pass the evening of his days; and there he did pass it, in company with his two good daughters, and in communion with his "Louise Bonnes" and "St. Michaels."

To me it was a satisfaction to enjoy his satisfaction; for he was in harmony with his pear-trees, and they, knowing what he wanted, and knowing that he was right, tried to do as he wished, and grew well—as espaliers, pyramids, dwarfs, balloons, or standards. They resisted blights and frosts, blossomed timely, set well, and bore their fruits. It was a delight to see little fellows of three feet high bearing up bravely their load of half a dozen Duchesses or Wurtemburgs, while stately standards stood and ripened their bushels of Urbanistes and Boscs through all the long summer suns.

It seemed to me that they leaned to the old man as he walked among them, trimming a little here, praising there—and I do not doubt they had as much satisfaction in him as he had in them; for he fully appreciated their virtues.

Do not think the old man did this because he wanted pears. He could have bought one for a sixpence any day, and have sat down in the shade and swallowed it; would that have sufficed? I trow not. No; he raised pears, as I said, because the trees must bear them, and it was his pleasure to give them every opportunity, which having done, the trees produced abundantly; and then the pears were eaten, because they had been created, not *vice versa*. Ah! many think it is a small thing to grow a good pear-tree, but it is *one* thing well done; and I know richer men than S. G. P., who, so far as I am aware, have never been accused of doing even one.

The Dutch doctor, Van Mons, was a creator of pears; and in his hand nature became a prolific inventor. It was his habit to sow the seed, to select from the young those which promised well, to graft them at once into bearing trees whose juices were rich, where they would make blossoms and fruit within three years from sowing the seed; for it is a curious fact, that the juices of the tree which really produce the fruit, have almost no influence upon the

little graft upon which the fruit grows. From the fruits so produced, many good pears were given to the world by Dr. Van Mons.

Now the doctor did this, not because he wanted pears, but because he wished nature to do all she could do, and he found a satisfaction in helping her toward completeness.

One crowning use of pear-trees and pears is, that they furnish topics for talk, and are, in my opinion, fully equal to a "Bourbon," had we one among us. I have known many virtuous men who grew pear-trees (I am proud to say it), and I never knew one who enjoyed scandal or backbit his intimate friends; the reason is plain—he had something better to talk about, in capacity quite infinite; for are there not Beurrés by the score? But no pursuit is perfectly safe from misfortunes, and pear-growing is not quite secure. Judge Buel once had a package of valuable pear-grafts sent to him from Paris, every one of which was choice and was labeled; but, sad to say, rats had eaten or damp had rotted the strings which bound them, and Beurrés were mixed confusedly with Bergamots. To my friend J. T. the judge gave some of these grafts, and J. T. took them, as a man might a young elephant or a fine horse, not counting the cost. He grafted them into his trees, and in due time they bore delicious pears—but—

"What were they?"

No mortal man could tell their names, and many of them were new to us. From that day J. T.'s peace of mind was gone, and, it seemed, hopelessly gone; for no nomenclature could be certainly right. It was well for Judge Buel that he was snatched away before these grafts bore fruit, and, perhaps, J. T. was happier in soon following him.

I alone remained, and, in the language of Mr. Samuel Weller, *I* may say:

"I eats my melting pears vithout any names, and gets along werry well indeed."

I would have my money-making friends, and my political friends, and my verse-making friends, and my women-friends, consider of this thing, and then plant pear-trees, and grow pears, that so it may be well with them. And I would have those wise men who *know* what a little care and kind treatment will do with a pear-tree, and how it comes to strength, and beauty, and fruitfulness, when external circumstances are made favorable by them, I would have them consider what grand results might come from a little of such judicious care and attention, if applied by them to a poor boy or girl now and then, or to a man or woman struggling, in an uncultivated soil, with crowded roots and bruised top. I would have them remember that the most capable and wonderful of all God's creations is MAN; and then I would have them not only cultivate pear-trees, but also cultivate men.—*Putnam's Monthly.*

SUMMER PRUNING or pinching in of dwarf pears, apples, etc., should be mainly performed during this month. Watch the trees from day to day, and by means of the thumb and finger take out the end bud of a too strong and vigorous shoot, thus compelling it to force its elongated growth into the side buds, and spread and increase the breadth and form of the tree, rather than add to its height. Weak shoots, not wanted for keeping the form, may be pinched back and made to form fruit spurs; but such weak shoots as are wanted to fill up and keep the form regular and perfect, will require mainly to be let alone. A little daily attention in forming trees by means of pinching out buds at this season will obviate any necessity for after severe pruning, and many a tree can be formed into a true and regular shape by means of one season's pinching better than would result from two or three spring or winter prunings.

GRAPES.

BY E. H.

As it is sometimes amusing, and oftener perplexing, to the readers of the HORTICULTURIST to determine whose experience is worth the most, I am willing to take my share of criticism on observations made over a wide extent of territory, as I have eaten grapes and tasted wine from Palestine to America. In Palestine the vine grows almost without care. The time has been when it might have received care, but at the present time, being filled with Moslems, to whom the use of wine is forbidden, the vine is neglected, and the art of wine-making slighted. The fruit is fair, and the wine is excellent. The vine is planted mostly on the hillsides, and mildew is almost unknown.

In Persia the grapes grow to a great size, are good eating, but, for some reason, do not make first-rate wine. The vine receives no care after planting, which is done mostly on the hillsides, of which there are many, and I never saw or heard of mildew in Persia.

The splendid grapes I ate in Turkey are pleasant memories. They receive no care, and, when planted on the hillsides, do not mildew. As they are superior without care, they would well reward labor and enterprise.

In Greece the vine receives some care, and, although they have no extra variety, are passable, and make a fair wine. No mildew on the hillsides, and but little elsewhere.

In Spain they make a good wine of almost any grape. I did not have time to experiment, but was told that almost every grape brought into this country changes its nature to an astonishing degree—some better, and some worse. No mildew, except when planted on low, flat land.

France grows good grapes and makes some good wine, and some that is no better than English wine. The vine is well cared for, and mildew sometimes makes its appearance on low land, but not on the hillsides. The French reason is, that as there is a greater circulation of air on the hills, the superfluous moisture is carried away before it can injure the vine. These remarks are appropriate to Germany, except that most flat land is of the same soil as the hills, and there are more grapes on the levels than in France. No mildew to speak of.

There are some excellent grapes in Switzerland, but the wine is not the best, as wine-making is overdone by adding too much water and sugar. No mildew on hillsides, or anywhere else, except when carelessly planted where the soil is damp or springy.

England is on the same line with America, and everybody knows how they do here—set poor vines in a poor place, give them poor care, if any (I speak of a class), and finish by saying "we can't raise grapes." With a good soil and good climate—with a greater variety than any other country, allowing six tenths to be worthless, leaves us kinds enough, which, if selected with judgment and cared for with the energy that characterizes the American people, will make America as good a wine country as any on the globe.

The rush for new kinds is a great waste of time, and is keeping us a hundred years behind the times. We are foolishly waiting for perfection, as every candid man knows that a thousand years from this date people will disagree in regard to the merits of some certain grape. If you plant a good kind, and give it the right care, you will be satisfied with the result, even though you be an American.

NOTES ON THE APRIL NUMBER.

Popular Evergreen Trees.—A timely article; I am glad to see you favor our noble White Pine. That and the Hemlock, because common, have been almost discarded by fancy planters of late years, and yet they are two trees without which no extensive place can really be called complete. Your remarks on the use of evergreens in the foreground are correct, but not half strong enough. I have in mind now several places where large growing dark evergreens fill up the foreground, destroying its openness of character, while the rear of the house is a level flat, devoid of everything ornamental except a woodshed! Half the number of trees taken from the front and placed in situation at distances not less than fifty feet from the house, in the rear, would lighten up the front, and give breadth, extent, and character to the whole.

Designs in Rural Architecture, No. 21.—Yes, the French or Mansard roof I suppose is and will be fashionable; but for houses on town lots, or in the country, I don't like it. True, it is economical, because the higher you go under one roof the less proportionate cost. It is the rage of the day, and of course I must submit; but to me the adaptation of this roof tones well only when applied to a one-and-a-half-story cottage or long city block. The architectural decoration is plain, and all good, to my mind, except the entablature above the center window, and that may be right, but does not please me.

Propagation of Plants, No. 1.—Good. I am glad to see Mr. Fuller's pen engaged in a series of articles on this subject, for he is practically capable, and while he will be minute, he will not give us words for the sake of writing. Readers of the Horticulturist have reason to rejoice at this promise for their improvement.

Cheap Advice to Nurserymen.—To this good advice for preparing pear seed I will only add, I have once or twice practiced swelling my seeds a little more rapidly than they would otherwise, by placing the shallow boxes in a spent hotbed for a short time, just before sowing, and that when I sow I take care to have the ground plowed several times, to warm it; and especially do I have it plowed afresh just when planting the seed.

A Country House.—I like this house, all except the little cockscomb ridge board finish. All the rest is plain, substantial, and characteristic of comfort, while it is of a sufficiently high range of architecture to be agreeable, if not beautiful. But, leaving the house, I am particularly interested in what you say about the position of the country on the Jersey side of New York. It is a pretty startling statement, that New York should be outdone by "mean little New Jersey;" but people must live somewhere, and when old prejudices are cast aside, New Jersey is found to have as many pleasant sites for residences as any other State. I must come and take a look at that new place on the Erie Railway, for I like New York city to do business in, but I must live in the country. Couldn't live without my trees, etc.

Beauty of America Apple.—From the description, this must be a good apple for the orchardist. By-the-by, I hear Mr. Elliot is about to revise his Fruit Book this present year. How is it?

Grape Cuttings from Modern History.—I am glad once again to see this writer; but of a truth he no more feels disposed to swallow committees than some of the rest of us. Every man who studies the Old Country teachings comes at once to the conclusion that no one grape is suited to all localities, or if it grow, prove hardy,

and fruit, it may not give quality equal to varieties that may be selected for special localities. I hope if he have a spare bunch of his Anna Harriet he will forward it me through the HORTICULTURIST publishers.

RED CEDAR AND MILDEW.—This is a practical, straightforward statement, and the red cedar grape-stakes are undoubtedly good; but I have seen the Isabella grape mildew badly, in New Haven county, when trained on cedar trellis, not stakes. It is possible there may be a pungency exhale from new wood that for a year or two will repel sporida, and I am glad to read this record, and hope its suggestions will be acted upon. As a boy, I worked on the Sound shore, and there we grew the White Chasselas each year, by laying it down in winter. We grew our Isabellas on trellis, and clambering as they would upon the old pear-trees, and those on the trees were always the most free from mildew.

Mr. Dewey's inductions here show that we are fast getting out of the tight-laced system of tying grapes to stiff rails, as well as reducing our barbarous practices of cutting away every twig and branch because it does not happen to harmonize with our preconceived views or leanings of grape pruning, or our ideas of system and order.

REUBEN.

THE AMERICAN JOURNAL OF HORTICULTURE.

THIS new competitor for public favor is now in its fifth month. We have received the four numbers already out, and have carefully perused their contents before we should venture to speak our opinion as to the merits or demerits of the magazine. It were an ungracious act to play the critic over the opening number of a magazine, and we have accordingly deferred our notice until we should see further numbers.

The publishers in their prospectus say, "That for a long time the demand has been felt for a journal in this department (Horticultural) of high tone and liberal ideas, employing not only the best talent in America, but the selection of all that is good from the English, French, German, and other foreign works. This demand we design to supply."

Language such as this would seem to imply that there was no Horticultural journal "of high tone and liberal ideas" in the country, an inference which we by no means consider the publishers as warranted in making. Without, however, caviling with the publishers for words rather of bad taste than bad intent, we express the hope, that if this desideratum does really exist, the *American Journal* may have the good fortune to fill it.

A new journal of Horticulture ought not to be criticised as a purely literary magazine, nor as a work on science. It has to follow pretty much in the same beaten track in which its predecessors have gone, and with the same subjects and opportunities as its cotemporaries. It has no novelties to unfold—few new subjects to discourse upon. It is rather to be judged by the manner in which it handles old themes, and the degree of intelligence manifested in the work. So far as the list of contributors is concerned, the *American Journal* gives a very goodly promise; and it must be confessed that in the several divisions of Horticulture, Pomology, Botany, Landscape Gardening, Natural History, etc., they have a very fine array. The next question is, will all these gentlemen do their part to keep up the standard of the *Journal* for which their names are responsible?

The January number is a very creditable specimen. So far as the accidents of good paper and elegant typography go, it stands

A No. 1. The embellishments of this number are chiefly borrowed. The architectural structure at the head of the article on Garden Architecture is taken from Hughes' Garden Architecture, very slightly altered, not improved, without giving any credit to the author from whom it is borrowed. So also in the continuation of the same article in the February number, the illustrations are taken bodily from this beautiful work of Hughes, and the unlearned reader given to understand that these are all the drawings of the very original writer of the article in question. Against this we enter our protest, for it is nothing more nor less than what is usually called piracy. We would recommend to this writer hereafter, when he has occasion to borrow so extensively, if he chooses to claim all that he writes as his own original matter, to at least give credit to the poor author for the illustrations. The April number of the *Journal* continues the subject with an article of nearly six pages, which it acknowledges as "adapted from 'Garden Architecture and Landscape Gardening,' by John Arthur Hughes." Adapted! we charitably suppose that this is a misprint, and that *adopted* is the word intended; for the article is copied word for word, and with the illustrations corresponds exactly in *words* and *figures* with the original.

We confess to having our bile a little disturbed by this beginning; it is bad enough in an old journal, when short of matter, to crib a little, but for a new journal starting fresh in the race, it is, to say the least, very bad policy. Its leading number should be original, and give evidence of the fact that the *Journal* can rely upon its own resources. In other respects the January number is a good one. The leader on Spring Flowers is well written and timely, full of tasteful and beautiful instruction on an always welcome subject. There is also a very sensible correspondent on pear culture: his ideas we like very much, but can't say we admire his wood-cut illustrations. We have grown all the varieties he speaks of, and have had many pets among them, but, sad to say, we don't recognize them in the cuts. Better forbear the cuts until the artist can have a chance to see the fruit, cut it, and draw the outlines from the sections.

The February number opens with a portrait and memoir of Marshall P. Wilder. We find a portrait of the same distinguished gentleman, and a memoir by P. Barry, in the March number, 1855, of the HORTICULTURIST. This number also contains the continuation of the Spring Flowers—a very valuable paper entitled May Flowers. It is refreshing to meet such a writer, and we tender him the warm hand of welcome, with our distinguished consideration. Blessed be the May Flowers, flowers of the month sacred to the blessed mother honored above all women! welcome the writer who discourses so eloquently on the flowers of this month of months.

Thanks also to the author of the article on Field Mice. The *Journal* is happy in such a correspondent. We have had this subject at heart for a long time, and been big with an article thereupon. Very few are aware of the importance of this subject, and of the incalculable loss which every year ensues from so small a cause. The writer has by no means exaggerated his theme. In the March number we have a leader from the "Sage of the Tribune"—a long talk about Dirt. The writer is evidently not much of an euphuist, or he had not chosen such a title. The article itself would make a most capital leader for the *Young Folks Magazine;* but as the readers of the *American Journal* are not supposed to be Solon's grandchildren, the article is hardly worthy the place of a leader. The writer's question, "What is dirt?" is pretty well answered by the article itself, for it is all over dirt; it remindeth us of Trinculo's burst of indignation uttered to the monster Caliban on emerging from the filthy pool into which Ariel's mischief had beguiled him—he has put our nose in indignation. Walter Scott has put the

same idea into better words as uttered by the gipsy Hayraddin, when asked what were his expectations on meeting death. "To be resolved into the elements." Said he, "My hope, trust, and expectation is, that this mysterious frame of humanity shall melt into the general mass of nature, to be re-compounded in the other forms with which she daily supplies those which daily disappear and return under different forms: the watery particles to the streams and showers, the earthly part to enrich their mother earth, the airy portions to wanton in the breeze, and those of fire to supply the blaze of Aldebaran and his brethren" —and this was written some forty years ago.

What a journal of this kind most needs is correspondents composed of plain practical men who write simple, unvarnished, useful articles full of information, the result of their own experience. Publishers of these journals are too apt to think it necessary to engage reputed names, at large prices, to write, as often happens, articles in which they take no interest, and without a particle of inspiration. They will discourse brilliantly through several pages of glittering generalities without any apparent aim or definite object. Such writing is well described by the familiar expression of "penny-a-lining." We could point out precisely such writing by a reputed name in one of these four numbers, but as we have no malice to gratify, we refrain from being more explicit. If any one thinks the cap fits, he is welcome to wear it. But our space will not permit our going into further detail. We welcome this new magazine to the field; there is room enough for it, and more besides. It comes forth in very handsome attire, and we wish it success. Only let it bear in mind what is due to others when it quotes or copies, otherwise we shall be down on it like a thousand of brick.

RAISING AND FRUITING POT VINES AS PRACTICED IN ENGLAND.

BY M. A. PAVARD,

(Member of the Imperial and Central Horticultural Society of Paris.)

During the course of November, when the wood of the vines from which cuttings are to be taken is sufficiently ripe, they are cut so that each shall contain an eye. They are planted in pots of about two inches in diameter, care being taken that the pots are well drained, and filled with good field earth rather light than strong. These slips are planted at such a depth that the top of the eye or knot is almost level with the earth in the pot. Some persons proceed as for ordinary slips—that is to say, they plant slips that are furnished with two buds. After this the pots are buried in a tan-bed formed in a green-house, heated little by little up to 70° or 75° Fahrenheit. The humidity of the atmosphere is maintained by frequently watering the flues, the walls, and the paths. As soon as the young plants begin to develop themselves, air is admitted on fine days; the humid heat is at the same time kept up, that they may receive no check.

When the roots touch the sides of the pots, the slips are placed in new ones about nine inches in diameter, care being taken, as in the first instance, that the pots are well drained. In the repotting, a more substantial soil is employed than before; this is often mixed with fine sand of a white pulverized kind, which, by facilitating the passage of the water, prevents its remaining to stagnate about the roots.

After repotting, the pots are buried in a

bed of tan, placed in a green-house of sufficient height to prevent its being necessary to bend the young stems, which must be allowed to grow up without the least obstacle to their straightness. To avoid placing a prop to each plant, which, besides being liable to hurt the roots, is a somewhat tedious operation, iron rods are placed about nine inches above each row of pots the whole length of the green-house, and as the stems attain the requisite height they are fastened to them. Their leaves and the flues are constantly wetted; they are watered when they require it, and more and more air is admitted as the season advances. Only a humidity agreeing with the elevation of the temperature must be carefully kept up—this being most essential to the thorough well-doing of the plant.

Toward the end of August the young plants will be about from one yard and a half to two yards in height, their diameter varying according to the species. Their vegetation now becomes slower, and the quantity of air is increased even during the night; then when the leaves begin to fall, all the plants are buried to a depth covering the pots in beds prepared for them. Laths are fixed to stakes buried in the beds, to which the branches are attached, so that the wind can neither agitate nor break them. On this plan the wood becomes completely ripened, and the plants are then ready for sale. They are usually sold to persons who force them during the following winter in such a manner that these slips bear fruit eighteen months after having been planted.

A few words upon the method most generally employed in forcing these young plants will support what I advanced above—that the slips produce fruit at the period mentioned. The green-houses commonly used for the purpose are of such a slope—the back wall so much higher than the front one—that the frame presents its incline to the full power of the sun. These kinds of green-houses are so much beneath the level of the ground, that the higher wall does not rise above it more than from twenty-four inches to about a yard.

The flues circulate in front of these houses. A shelf placed about six inches above the principal flue serves to support the pots. These preparations finished, the place is gradually heated up to about 60° or 70° Fahrenheit. The pots and flues are frequently wetted, and the upper flue is also often provided with a gutter kept constantly full of water, so as to disengage a vapor which, applied to the sides of the pots, excites vegetation. When the plants begin to bud, a little air is admitted in suitable weather. Openings made in the back and front walls, and closed by shutters, permit the entrance of air, while cold winds are excluded. When the shoots become long enough, they are trained upon the iron rods running along the sides of the frame. The remaining cares consist in nipping off buds, if required, and the necessary waterings, using water as much as possible of the temperature of the forcing-house, which must be kept some degrees higher in the day than at night.

After five or six months of this culture well carried out, the grapes, according to the variety and the period at which their forcing commenced, begin to ripen. The wetting of the flues, etc., is then diminished, and more air given up to the time of gathering the fruit. Once this is over, many persons do not retain the vines, which, to their ideas, are then entirely exhausted.

Vines thus reared frequently produce, notwithstanding the smallness of the pots, grapes of good size, bunches weighing a pound or more being not uncommon. It is true that liquid manures, which need so much care in their successful employment, are much used in this culture.

These facts explain why this mode of cultivation is in such great repute among our neighbors, for it is not rare to meet in England with establishments that each year obtain from two to three thousand plants for the purpose of forcing.—*Floral World.*

EDITOR'S TABLE.

To Contributors and Others.—Address all Communications, for the Editorial and Publishing Departments, to Geo. E. & F. W. Woodward, 37 Park Row, New York.

To Cure Smoky Chimneys—as desired in your number for April (p. 123)—place on the top a sheet-iron fixture as large as the flue, expanding as it rises, in the proportion of three at the bottom, four at the top, and fifteen high (say twelve inches bottom, sixteen inches top, and five feet high), and if the flue be about twelve inches, cut out triangles six inches deep and three inches wide at the top, forming a crown of saw-teeth.

These proportions were given to me in 1837, by Mr. Oldham, the engineer in charge of the mechanical department of the Bank of England, when he called my attention to the draught of the flues in the press-room, and then to the fixture on a neighboring chimney, and said that these rooms were almost uninhabitable when he came there, until he applied the same fixtures that he had previously used on the Bank of Ireland, and that had cost that bank about fifteen hundred pounds in experiments.

But if the top of the chimney be not above all neighboring objects, then take the same proportions in a curve, and place the adjutage on a swivel. This was done about 1842, on the flue of the House of Representatives, at Washington. The difficulty there arose from the dome. The cure was complete, as long as the experiment was tried. But in a short time a patentee obtained a contract for several flues, and his arrangement was substituted.

Again: a well-known patentee of cooking-stoves said: "I never have less than twelve feet height of pipe above the stove. If I can not get it in the room, I put the pipe inside the chimney, and I never fail in getting a good draught."

The Venetians generally use bell-muzzle flues, but they spread more rapidly than Mr. Oldham's proportions. B. A.

Sweet Potatoes.—Although sweet-potato-growing may be regarded as a crop for the South, yet their culture is simple, and the crop in many sections of the Northern States a very remunerative one. Sandy soils are best suited to their growth, but any good loam, well drained, will answer. The ground should be well manured with old, rotten manure, and plowed three or four times before planting. The sprouts may be grown by placing the potatoes in a hot-bed having only a gentle heat, and covering them about two inches deep. When the sprouts have grown from four to six inches, pull them from the potato by slipping the thumb and finger down between the tube and sprout. About the 20th of May or 1st of June is the best time to plant out, previous to doing which the ground should be thrown up into ridges or hills, about eighteen inches high, and the plants set, if in hills, two plants in a hill, and if in ridges, one plant about every two feet on the line.

Covering the ridges or hills with finely-pulverized charcoal, we once saw practiced with the greatest success. It increased the heat in the soil, and at the same time appeared to retain steady moisture.

Keep the hoe and rake going; well-stirred soil absorbs dew and retains moisture longer than that left hard and unstirred.

INTERNATIONAL FLORA.—J. Q. A. Warren, corresponding member of the Royal Hawaiian Agricultural Society, at the request of members of that Society, is striving to inaugurate a system of exchange of the flora of this State for that of the Islands, the object being to propagate California trees and plants in the Islands, and the Islands' products in this State. If this movement is faithfully seconded, it will result in benefit to both countries. Most of the green-house plants of this State will doubtless thrive in the open air at the Islands, while our coniferous trees will flourish in the mountains of Hawaii, and, if cultivated, will eventually furnish that country with much-needed fencing and building material. Beyond question, many of the native ornamental and other plants and trees of the Islands can be cultivated profitably in this State. As an experiment, Warren forwarded, by the Ethan Allen, from our green-houses, Irish yew, chrysanthemums, arbutus, agapanthus, salvias, brugmansia, plumbago, lobelias, roses, choice bulbs, and seeds. These are the first lot of hot-house plants sent from here, are in good order, and are put up in a manner to insure their safe transportation. Island plants will be forwarded here in return. Parties in this State who will furnish Warren (at Kellogg's seed store, Sansome Street, near Clay) with native plants and bulbs for shipment to the Islands, will in turn be supplied with such specimens of the Island flora as may be received. This subject of international exchange of flora is one which will doubtless engage the attention of all those in the State engaged in horticulture and floriculture.—*Morning Daily Call*, San Francisco, Cal.

WESTERN HORTICULTURAL SOCIETIES.—We notice that throughout all the Western States numerous Horticultural Societies are being formed, while the attendance and discussions at the meetings of the older associations are such as to exhibit a widespread and increasing interest in the knowledge of fruit and floriculture. We have occasionally glanced at important remarks made at these meetings, and hereafter propose to give more or less of the doings of each association, provided the secretaries will favor us with early copies of their transactions from meeting to meeting.

To produce an elegant effect in the flower garden in October and November, sow now seeds of the double white wallflower leaved stock. As soon as the plants are large enough to be transplanted, put each one separately into a seven-inch pot, and plunge the pots to the rims in any out-of-the-way place. They will need no care until September, when they will commence to bloom. Reject those with single flowers as soon as they are discovered. If the seed is good, nearly all the plants will prove double. Early frosts, which destroy many other bedding plants, do not have the slightest effect upon this stock. In October, they may be turned out into any of the beds where the plants have been killed, and their masses of double white flowers will attract attention f om every one. In our own garden we had a fine show until the 10th of December, last year, long after every other bedding plant was destroyed. This stock grows to the height of but nine inches, and the same in diameter across the plant.

WILMINGTON, DEL., *May* 18, 1867.

MESSRS. GEO. E. & F. W. WOODWARD: *Gentlemen*—Will you please direct me to some of the nurserymen or florists from whom I may purchase some of the grapevines and plants or flowers named in your "Record of Horticulture," and oblige,

Truly yours, H. C. MCLEAR.

[By reference to our advertising pages, the names of many of our best and most reliable nurserymen may be found, some of whom, no doubt, have the plants you mention.]

CLEMATIS.—A few of these elegant climbing plants should be in every garden. Mr. Fuller, in his excellent article on the subject, in the "Record of Horticulture," says: "It is best to protect all of the varieties in winter, as they will bloom much more abundantly than if left exposed. A simple and very efficient method is as follows: In the fall, and just before the ground freezes, take the plants down and coil them around the base of the stakes, then throw on three or four inches in depth of coarse litter, such as straw or leaves, and over the whole place a few shovelfuls of soil. The plants should be uncovered in spring, soon after the frost is entirely out of the ground. It is but a few hours' work to protect in this manner a large number of plants, and the increase in the number of flowers will amply repay one for their trouble. To produce the best effect, the Clematis should always be planted in groups, placing a stake at each plant. The soil should be deep and moderately rich, one composed of equal parts of rich loam and leaf mold will be found to answer very well for these plants.

AZALEAS.—It is the prevailing opinion that these plants should have shade in their summer quarters. Our experience of several years with them is, that they bloom much better if placed out of doors in the full sun. If kept in pots, the pots should be plunged; care being taken to raise them up a little, as often as once a month, to break off any roots that may have grown through the bottom of the pots. Young plants will grow with much vigor, and soon make fine specimens, if they are turned out of their pots into the ground as soon as the frosts are over in the spring. A mulching of short grass from the lawn mowings will keep the ground moist, and prevent injury to the roots from dry weather in July or August. One of our best growers of the Azalea informs us, that it has been his practice to turn out into beds all his plants, both large and small. When lifted in the fall, they came up with large balls of earth completely filled with roots, and suffered not a particle by being again put into pots. The soil should be well mixed with leaf mold from the woods, if possible. There is no plant grown that will give more satisfaction, either for culture in rooms or the green-house; and if well cared for, its beauty increases with its age.

LAWNS all during this month should be frequently mown and rolled; but as the regular period of seed-forming and comparative rest to the grass approaches, the lawn should be mown only when it is apparent the roots are about to send up flower or seed stems. Too frequent mowing in dry hot weather in our climate has rendered many a lawn bare in spots, or brought us false coarse grasses.

JUDGING from the large lists of new plants and flowers to be sent out, this season will be a busy one for all amateur and professional gardeners. Floricultural committees will have to keep themselves well posted, or they may find their knowledge of little value on days of exhibition.

HARDIHOOD OF PLANTS AND TREES.—It has long been our impression, that many trees and plants introduced from abroad, as well as grown by skillful American growers, would be hardy were they not over-stimulated in their growths either by artificial heat or rich manures, or both, to an extent that softens and expands the tissues beyond their natural order. Our attention has now been drawn to this point again, and we therefore write this paragraph, from reading an account where the grower succeeded in growing fine plants of a certain variety, but could not keep them long, or make them endure changes of temperature, while a plant which by chance had got neglected and left to grow in a poor soil and position continued to grow and flower abundantly and apparently

healthy, but with not so fine an appearance or large size of foliage or bloom.

Sincerely, we wish some inducement could be offered for experiments with many of our rare evergreens, etc., by placing them in positions and soils where moderate growth could be secured while they ripened their tissues as they grew.

We have no doubt that many reports from different sections, of a new variety of grape or tree proving tender, arises from the over-exertion the plant has made while young, as well as by the extra care and stimulus of rich soil, etc., given it by the receiver.

"Crying their Eyes out."—This term we have frequently heard used by Germans when speaking of the bleeding of vines from pruning at the wrong time. Lately, we paid a visit to a vineyard of Concord vines about four years out, when the application came at once home to our mind. The vines were strong canes well grown, and the canes laid in very handsomely upon the wires, leaving from three to five buds upon a cane. They had wintered perfectly; but being pruned late in the spring, nearly every cane had lost two or three of its last or extended buds by reason, as we fancied, from bleeding, literally having "cried their eyes out."

Thin the Fruit.—If large and choice well-flavored fruit is wanted of any kind, it must be thinned out, removing a few at a time from every part of the tree, so as to leave the residue pretty evenly distributed. The work can not be all performed at once, and it therefore should be commenced early in the season, the operator going over his trees, bushes, or vines from time to time, removing now one here, now one there, as the eye meets it, and the evidence appears of the advantage obtained by its removal. Early thinning, before the strength of the tree or vine is taxed in the stoning or seeding, will avail much more than the same course afterward.

Camellias should remain in the green-house until growth ceases and the wood becomes brown. Give air plentifully, and less moisture, to avoid a second growth, which is likely to occur if the plants are kept in a close, warm, moist atmosphere. As soon as the wood is mature, the plants may be put out of doors, in a partially shaded place, where they will not receive the full sun after ten o'clock A. M. Those who have large collections will find it to their advantage to construct a sort of a shed with the sides and roof of lath placed about an inch and a half apart. This will admit sufficient light and air on all sides, as well as the rain. Some of our large florists and nurserymen have used such structures much to their advantage for the summer protection of many varieties of green-house plants.

Newly planted trees or shrubs are much benefited by a mulching a couple of inches thick placed around them at this season. We have found the newly mown grass from the lawn an admirable material. If put in place while green, it wilts down, keeps its place, and is not liable to be blown about by winds, as is the case if leaves or straw litter are used. The grass at this time has no seeds that will germinate, and when decayed in the fall may be dug in with advantage to the future growth of the tree.

New Orchid.—An orchid has lately flowered which is pronounced by Professor Reichenbach to be an entirely new species of Epidendrum. Herr Reichenbach proposes that it be called *Epidendrum eburneum*, in consequence of the ivory-like appearance of the flower.—*Cottage Gardener.*

Soft water for watering plants and other uses is not always at hand. Caustic lime in proportion of one to five—that is, one gallon of lime water to five gallons of hard water—will change it to the condition of boiled water.

DAHLIAS, as they grow, should occasionally have the leader stopped by pinching off; and as the side branches extend, either bend them down and peg them to the ground, or occasionally pinch them back, and thus make the plant when it comes into flower a mass of foliage and flowers rather than a tall stem supported by a stake, which, however ornamental it may be made, is yet not a part and parcel of floral beauty. Water once a week or more with soapsuds waste.

SUMMER PRUNING OF THE GRAPE.—Very much has been written on this subject, the pith of all being that it is desirable to have as little extra wood as possible, and yet maintain a healthy growth of vine and maturation of fruit. In our May number we drew the attention of our readers to the first point, viz., that of rubbing out or destroying all superfluous buds; but at this season the vines are vigorous, and growing so rapidly that an almost daily attention is necessary. If from neglect the shoots have got two or more leaves beyond what they should have, it is better to stop them back with the thumb and finger, leaving an extra leaf, rather than hereafter to go through and cut and slash in order to get breathing room for the foliage. Let the canes for next year's fruiting grow as strong as they may, laterals and all, without any pinching; especially is this to be heeded with Clinton, Norton's Virginia, and other sorts, which it is fast coming to be learned produce the most and best fruit on the laterals of this year, and therefore need, in fall pruning, to be left with long canes. On the fruit canes some advise stopping at one leaf beyond the last bunch of fruit. We prefer to let it make two to three leaves before stopping, believing that the more expanse of perfect leaf we can get on that cane or extension the better will be our fruit.

Another point in grape culture we must urge, and that is a judicious and careful thinning of the fruit. Too much fruit not only exhausts the vine and enfeebles it so as to induce disease, but the quality of the fruit is so much impaired, that he who buys for the market or wine will reduce the price accordingly. Two pounds of really large and perfect bunches will bring nearly if not quite as much as three pounds of imperfect ones, and the grower will find for the first a ready sale, while for the second the buyer will hesitate and haggle about the price.

CUCUMBER AND MELON VINES, as well as tomato plants, will mature earlier and better fruit by stopping the ends of the vines or shoots about one joint beyond the blossom or young fruit. The laterals or side branches should be stopped in just the same as the leaders.

ARRANGEMENT OF SUMMER FLOWERS.—Although some of our readers will have planted out their summer bedding plants ere this number reaches them, yet many will not have done so, and even to those who have, we wish to suggest a word by which perhaps they may improve. It has been and yet is with most who group, to think only of colors; but they should go one step farther, and adopt in a measure the system by which practical bouquet makers give such effect to the arrangement of a few flowers, and that is, "use filling in." To this end, as we now have a large number of variegated and colored foliaged plants, we suggest their use as a filling in among the plants whose great beauty is their blooms; by this means a more satisfactory and less monotonous tone is given to the group; and if then we add a few more whose beauty is in their form and grace as well as color of foliage, we shall have created a mass closely resembling, but more artistic and scarcely less graceful than nature in her wildest and most harmonious moods.

HONEYDEW may be eradicated by dusting the parts affected with flour of sulphur or fresh slaked lime.

ROSE GERANIUMS are generally cultivated for their leaves, which are useful in making bouquets. The plants are generally planted out during the summer into the ground; they grow vigorously, and furnish abundant foliage during the summer months. In the fall they are lifted, put into pots, and placed in the green-house. By this process they lose their leaves, and are useless until February or March. To have them in perfection during the winter, young plants should be propagated, and in May put into eight-inch pots; plunge the pots in the border an inch below the rims; they will need no further care until fall, when the plants can be taken up in full foliage, and not a leaf need be lost.

MONTHLY CARNATIONS.—Cuttings made in March, and now well rooted, may be turned out of the pots into a well-prepared border. If designed for winter blooming, pinch off the flower shoots as soon as they make their appearance. They may need a second pinching in July, but generally once is enough. If bloom is desired in the open ground, allow the flower stalks to grow, and keep them carefully tied up to stakes. Those to be removed into the dwelling or green-house should be carefully taken up early in October, with a ball of earth, placed in seven or eight inch pots, and well watered and shaded for a few days —the flower stalks to be tied up as they grow.

Plants so treated by the writer last season, commenced to bloom the latter part of December; and now, May 15, have some buds yet to open. We give a short list of some of the best varieties: La Purité, Flatbush, De Fontana, Madame Vernay, Unique, Brightness, Astoria, President Degraw.

SALT UPON LAWNS.—The use of salt spread upon lawns in early spring, and washed in by the rains, has, in our observation, been productive of the best results; and should a lawn show flagging of vitality, even in the month of June, we would not hesitate to sow at the rate of one pound to a square rod, scattering it broadcast just before a warm rain.

STOCKS—TO DISTINGUISH SINGLE AND DOUBLE.—A writer in the *Gardener's Magazine* says that when transplanting his stocks he examines the roots, discarding all which have roots like the carrot, as they only produce single flowers, while those which have a tuft at the root invariably produce double flowers.

ROSES do best in a strong soil, not a stiff clay, but a rich, firm clay loam. If your roses cast their buds before blooming freely, it is probably because of a too stiff and cold wet soil. It should be removed and replaced with light rich loam.

LILIUM AURATUM, it is said, is not the only fine and showy variety of its class; but there are those of pure white, those with shades of color, and with a rich red stripe down the center of each petal instead of the golden one, from which the auratum derives its name.

OIDIUM OR VINE MILDEW.—A writer in the "London Journal of Horticulture" says "that a complete cure for the above disease may be found by taking one pound of flour of sulphur, one pound of slaked lime, and one gallon of rain water; mix well together, and boil twenty minutes; take off and strain; add one gallon more of water, and again boil twenty minutes, when the liquid will be a fine amber color; put in a jar and cork tight. When used, take one pint to sixteen gallons of rain water and syringe the vines, and it will not injure fruit or leaves."

HOE frequently around newly planted trees. It is better than mulching with any material, as the fresh-stirred soil admits air and light, and absorbs the dew of every night. If you have no time to hoe, then mulch.

SHRUBS that have done blooming should be at once headed back, in order to have them form a vigorous growth and prepare their flower buds for another season. Cut severely the strong growing shoots, lightly those more slender, and take out entirely all very small spray, leaving the plant in a cone or round-headed form, as your fancy may dictate.

SPECIAL NOTICE.—Any subscriber to the HORTICULTURIST sending us two dollars and fifty cents for two copies of the HORTICULTURIST, for new subscribers, in addition to his own, shall have sent him, post free, a copy of "Woodward's Record of Horticulture for 1866," edited by Andrew S. Fuller. The matter and illustrations are original. It is handsomely bound in extra cloth, beveled edges. Or any new club sending five dollars for three copies, shall be entitled to same premium.

WE shall feel obliged to any of our readers who will furnish us with notes of the results of their experience the coming season with the various small fruits as they ripen. We wish to collect all the information possible on the strawberry for our July number, and the raspberry, blackberry, etc., for the August number.

IMPORTATION OF SPARROWS.—We notice that two or three hundred sparrows were imported from England this last March into New York, but do not know by whom. Can any one tell us where they are.

BOOK NOTICES.

WOODWARD'S RECORD OF HORTICULTURE FOR 1866, edited by Andrew S. Fuller, author of "The Grape Culturist," "Strawberry Culturist," "Forest Tree Culturist," and "Small Fruit Culturist." 127 pages, beveled boards, post-paid, ONE DOLLAR.

This work contains a review of all the Horticultural books published in 1866, and records all Horticultural facts of interest for that year. The matter has been written expressly for the work—is not copied or quoted. It is purely practical and original, written by a successful author of very successful books. We recommend it to our readers as a repository of facts and information not to be obtained in any other form. The work will be published annually. This is the initial number.

In this work, the new edition of "Bridgeman's American Gardener's Assistant" is criticised in a manner not approved of by the revisory editor, who represents himself to be the agricultural editor of the New York *Times*, *Observer*, *Independent*, and *Working Farmer*. Copies of the book were solicited by him for each paper, and the following retaliatory notices published.

The explanation of the New York *Times* is, that this was written by another editor. But "that those who live in glass houses should not throw stones"—

THE RECORD OF HORTICULTURE FOR 1866 is a work edited by Andrew S. Fuller, and published by George E. & F. W. Woodward. It bears the marks of having been hastily prepared, in an excessively careless and ungrammatical style, and in a frequent superficial treatment of the subjects discussed. The publishers have done their best for the work by printing it neatly and illustrating it with a few well-executed engravings.—*N. Y. Times, May* 19.

WOODWARD'S RECORD OF HORTICULTURE FOR 1866, edited by Andrew S. Fuller, and published by George E. & F. W. Woodward, has little that is new, and appears to be rather an advertisement of the publishers' other books than a repository of facts and information.—*N. Y. Observer.*

One object of the "Record of Horticulture" is to record and review all books on Horticulture published during the year. The editor of the New York *Observer* supposes this to be the publisher's advertising list.

We extract the following from a three-quarter column notice in the New York *Independent*, merely correcting the price of the book.

The most ridiculous thing in the whole book is the relentless spite manifested against the reviser of "Bridgeman's Gardener's Assistant," for revising, enlarging, and illustrating a book that everybody—even Mr. Fuller—acknowledges to be *the authority* among Horticultural writers. As he has made some false statements, in which our integrity is assailed, it is proper to explain the matter in this place.

The publisher of "Bridgeman's Gardener" brought the wood-cuts, ready made, to the reviser, before he commenced the task. A portion of the illustrations were purchased by the publisher of other publishers. The reviser had nothing whatever to do with the illustrations, only to insert them in the proper places. In a few instances the compositors failed to make the typographical corrections designated by the reviser. Therefore the first edition of a few dozen books of "Bridgeman" was issued with typographical errors. Before the next edition is printed, all such errors will be corrected.

Who has one dollar to pay for a book purporting to be a "Record of Horticulture," when, in fact, it is a record of slanders?

To corroborate what we have penned, one paragraph is herewith copied from that wonderful "Record of Horticulture." The author says, "We fear, however, that some of our publishers, in their eagerness to have a long list of their *own* publications, employ men to write books who have no practical knowledge of the subject on which they discourse. * * * The two classes of writers most to be feared are those who have much to say, theoretically, but nothing practically; but think it their duty or privilege to make a book, if they can get a publisher to pay them for that which they purloin from others."

When it comes to this, that an author must write a second book to extol his own former work, and then give his book a false title, to induce honest men to purchase a treatise on *horticulture*, when the pages are filled with matters which are of no interest except to the author, the swindle ought to be exposed.

The second edition will be ready June 15.

Messrs. A. Williams & Co., of Boston, have in press, and will shortly publish, Chemistry of the Farm and the Sea. By Jas. R. Nichols, M.D., Editor "Boston Journal of Chemistry and Pharmacy." In one vol. 12mo., elegantly bound in cloth. Price $1 25. Geyelin Poultry Breeding in a Commercial Point of View. With an introduction by Charles L. Flint, Secretary Mass. State Board of Agriculture. One vol. 12mo., with twenty-seven illustrations. Price $1 25.

Beet-Root Sugar and Cultivation of the Beet. By E. B. Grant. Boston: Lee & Shepard, publishers. The cultivation of the beet root for manufacture into sugar has long been practiced in France; but so cheaply did we for years obtain sugar from the cane grown in our Southern States, that our people North would give the subject little thought or attention. The rebellion, or civil war, however, in a measure compelled our Northern farmers to take up some crop for the purpose of obtaining a sweet to meet their wants. Sorghum and the beet have, therefore, during the past few years, received at the North, and especially in our Western States, pretty extensive cultivation—millions of gallons of sirup and thousands of pounds of sugar having been made from the sorghum; and one Illinois establishment has alone during the past season manufactured over 100,000 pounds of beet-root sugar, exhibiting fully the practicability and profit of beet-root growing. The work now before us has evidently been compiled with care; and in its history of the beet, tabular statements of the crop as produced on land, soils adapted to, seed and manures for, methods of cultivating, harvesting, etc., etc., contains valuable information in a neat comprehensive form that should commend its sale to every farmer in the country.

Diamond Edition of Thackeray.—Published by M. Doolady, New York. The reading public are under obligations to the publishers of the works of standard authors in this cheap and elegant form. The volume before us, "The History of Pendennis," is the first of the series. The other works of the author will be issued as rapidly as they can be prepared for the press. This edition is published under the supervision of W. L. Alden.

New Book Lists.—We call the attention of our readers to our new and revised book lists, containing all the new agricultural and architectural books published. We are particular in executing orders to procure the latest editions and best bound copies, and pack them to carry safely to any part of the country. We also supply the books of all the leading publishing houses in this and other cities. Our readers can thus procure at their own post-office all the publications of the day at the same price as by a personal visit to the city.